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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,704	12/09/2003	Stefan Marinca	H0682.70000 US00	5247
7590	11/17/2004		EXAMINER	
Steven J. Henry Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210			LAXTON, GARY L	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,704	MARINCA, STEFAN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gary L. Laxton	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/09/03</u>  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Specification***

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 1-20 are objected to because of the following informalities:

Claims 1 and 19; last sentence recite "thereby reducing"; it has been held that the functional "thereby" statement does not define any structure and accordingly can not serve to distinguish. *In re Mason*, 114 USPQ 127, 44 CCPA 937 (1957).

Claim 20 line 1 recites "adapted to"; it had been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Joseph (US 4,399,399).

Joseph discloses the claimed subject matter including 1<sup>st</sup> Amp (28); 2<sup>nd</sup> transistor (20); load resistor  $\Delta V_{be}$  (22); diode connected 1<sup>st</sup> transistor (18); and feedback loop (28, 17, 12, 14).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art figure 1 (APA figure 1) in view of Dosho et al (US 5,751,142).

APA figure 1 discloses the claimed subject matter regarding claims 1 and 20 except for a diode connected transistor.

Dosho et al teach connecting diodes to the inputs of amplifiers and further teach in figure 6 that it is known in the art to form diodes by connecting the base of the transistor to its source or emitter.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the prior art figure 1 to include a diode connected transistor being coupled to the one of the inputs of an op amp as taught by Dosho et al in order to block reverse currents coming from ground.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,614,284 Beeman et al discloses a PNP multiplier reducing the Early effect.

***Allowable Subject Matter***

8. Claim 19 would be allowable if rewritten or amended to overcome the objection(s) set forth above in this Office action.

9. Claims 2-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claims 2-18; prior art fails to disclose or suggest, inter alia, a bandgap reference voltage circuit having third and fourth transistors, the third transistor being coupled to the emitter of the first transistor; and the fourth transistor being coupled via the load resistor to the emitter of the second transistor, the emitter area of the fourth transistor being greater than that of the first or third transistor, such that the first and third transistors operate at a higher current density than the second and fourth transistors and wherein a PTAT voltage is provided via a resistor, in the feedback loop, at the second input to the amplifier such that the voltage provided at the output of

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the amplifier is a combination of the base emitter voltages of the first and third transistors plus the PTAT voltage.

Claim 19; prior art fails to disclose or suggest, inter alia, a bandgap reference voltage circuit having third and fourth transistors; the third transistor is coupled to the emitter of the first transistor; and the fourth transistor is coupled via the load resistor to the emitter of the second transistor, the emitter area of the fourth transistor being greater than that of the first or third transistor, such that the first and third transistors operate at a higher current density than the second and fourth transistors and wherein a PTAT voltage is provided via a resistor, in a feedback loop of the amplifier, at the second input to the amplifier such that the voltage provided at the output of the amplifier is a combination of the base emitter voltages of the first and third transistors plus the PTAT voltage, and the base-collector voltage of the other of the first and second transistors is minimized by the amplifier which is coupled in a feedback loop to the collector of each of the transistors.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 11/15/04  
Gary L. Laxton  
Patent Examiner  
Art Unit 2838